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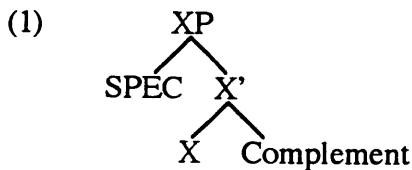
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Layered Specifiers*

Masatoshi Koizumi

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A standard X'-schema in (1) expresses the three points stated in (2), among others (cf. Chomsky (1986)).



- (2)
- Asymmetry: A node is projected from only one of its daughters.
 - Binarity: A node may have (at most) two daughters.
 - Maximality: A head may project (at most) two non-minimal projections.

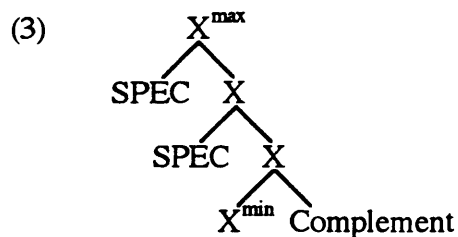
From Asymmetry and Binarity, it follows that a head may take at most one sister (i.e. a complement) (A). To derive that a head may host at most one non-sister (i.e. a specifier) (B), Maximality needs to be stipulated in addition.

Recently, Chomsky (class lectures, Fall 1993) proposed to eliminate X'-schemata of any kind, deriving instead some of its effects from what he calls

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“bare” X’-theory. The core of the “bare” X’-theory is MERGER (a generalized transformation), which takes two syntactic units and put them together, asymmetrically projecting one of the two inputs. As before, Asymmetry and Binarity are crucially assumed, guaranteeing (A), though Maximality is not incorporated into the system. In the “minimalist” framework being developed by Chomsky and others, Merger is a (near) conceptual necessity, because in this framework linguistic expressions with more than one terminal node cannot be created without some kind of generalized transformation, Merger being the simplest possible one.

Unlike the X’-schema (1), Merger does not guarantee (B). The “bare” X’-theory as it stands, therefore, does not preclude a structure with multiple specifier positions such as (3).



While this might appear to be a defect of the “bare” X’-theory, I will argue to the contrary. Specifically, in this paper I will present evidence for Functional projections with two or more specifier positions (OR LAYERED SPECIFIERS). Hence, allowing layered specifiers is a virtue of the “bare” X’-theory, rather than a defect thereof. This is a welcome result, because Maximality is not a conceptual necessity after all.

In the first section, I will briefly review some of the assumptions crucial for our discussion. Evidence for layered specifiers will be presented in the subsequent three sections. In due course, I will also demonstrate that Equidistance of Chomsky (1993) applies not only to A-movement but also to A-bar movement (following Branigan (1992)).

1. Minimize Chain Links and Equidistance

As a refinement of Relativized Minimality of Rizzi (1990), Chomsky & Lasnik (1991) proposed the Minimize Chain Links (MCL), which essentially says, “Do not skip potential landing sites” (cf. also Chomsky (1993)):

(4) Minimize Chain Links \approx Do not skip potential landing sites.

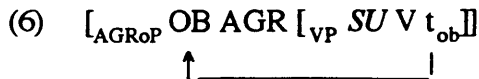
To illustrate the working of (4), let us consider the hypothetical situation in (5).

- (5) a. \checkmark $[_Z \alpha_i]$ $[_Y t_i']$ $[_X t_i]$
 \uparrow (II) || (I) |
 b. * $[_Z \alpha_i]$ $[_Y \beta]$ $[_X t_i]$
 \uparrow (III) |

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When something (say α) moves from position X to position Z, and there is a potential landing site Y for α between X and Z, α must "stop by" in Y on its way to Z, as shown in (5a). If position Y is filled with something else (say β), then α is forced to move to position Z in one fell swoop, as in (5b). Since the chain link in (5b) (i.e. Link III) is longer than the links in (5a) (i.e. Link I and Link II), (5b) violates the Minimize Chain Links. The MCL thus predicts that A-movement across an A-position, A-bar movement across an A-bar position, and Head movement across a head position will all lead to ungrammaticality.

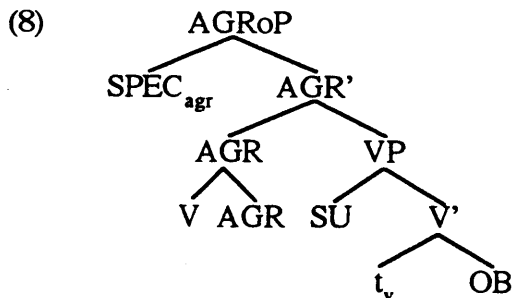
Assuming the Internal Subject Hypothesis and the AGR-based Case Theory of Chomsky (1993), raising of the object from its original position to the Spec of AGRoP must be allowed by grammar. Yet this movement appears to violate the MCL, because it skips a potential landing site, i.e. the Spec of VP occupied by the subject or its trace, as shown in (6).



To solve this and related problems, Chomsky (1993) suggests to sharpen the notion of "shortest links" as in (7).

(7) If α, β are in the same minimal domain, they are *equidistant* from Γ .

Given (7), two potential targets of movement are equidistant if they are in the same minimal domain (see Chomsky (1993) for the definition of minimal domain). In the structure given in (8), where the verb has adjoined to AGRo, the minimal domain of the chain of the verb (V, t_v) is ($SPEC_{agr}, SU, OB$).



So the Spec of AGRoP and the Spec of VP are equidistant from the original position of the object (in fact, from any position). That is, the link between the original position of the object (OB) and the Spec of AGRoP and the link between the original position of the object and the Spec of VP will have the same length by definition. Thus, the object can move to the Spec of AGRoP, across the Spec of VP, without violating the MCL. It should be emphasized that what is crucial here is whether the actual landing site (the Spec of AGRoP) and the potential landing site (the Spec of VP) are in the same minimal domain, and it is totally irrelevant whether the starting point of the movement (the complement position of V) and the potential landing site (the Spec of VP) are in the same domain.

Now we are ready to start our discussion.

2. Topicalization in English

Since Higgins (1973), there has been a long debate as to whether Topicalization in English is an adjunction or substitution operation, and this issue has not been settled yet (cf. Authier (1992), Baltin (1978; 1982), Bowers (1976), Chomsky (1977), Culicover (1991), Iwakura (1978), Kuwabara (1992), Lasnik & Saito (1992), Müller and Sternefeld (1993), Noji (1993), Rochemont (1978; 1989), Toyoshima (1991), Watanabe (1993), among others). Assuming that there is only one CP-type projection above IP, Lasnik & Saito (1992), for example, argue that embedded Topicalization exemplified in (9) indicates that the topic phrase is adjoined to IP as shown in (10).

(9) Robin says that, *the birdseed*, he is going to put in the shed.

(10) IP-adjunction Analysis (Lasnik & Saito (1992) and others):
 ...[_{CP} that [_{IP} Topic [_{IP} ...

As has occasionally been observed, Subject-AUX inversion may occur in certain types of embedded clauses. Consider (11) (cf. Hooper & Thompson (1973), Culicover (1991), Authier (1992)).

- (11) a. Becky said that at no time would she agree to visit Martin.
 b. John swore that under no circumstances would he accept their offer.

If we assume, following Chomsky (1986), that Subject-AUX inversion is the result of AUX movement from Infl to a higher head position (e.g. C), then (11) suggests that between IP and CP there is another set of complementizer type projections whose head hosts the auxiliary. Since Subject-AUX inversion in (11) appears to be induced by the preposed "affective" element, it seems natural to suppose that the auxiliaries and the preposed constituents enter into Spec-head agreement. Then the pertinent portion of (11) has the structure (12).

(12) ...[_{CP} that [_{CP} XP [_C AUX [_{IP} ...

Given the second CP, Lasnik & Saito's argument loses its force, for the embedded topic may well be in the Spec of the second CP. In fact, citing Hooper & Thompson's (1973) observation that all the environments in which Topicalization is possible are also environments that allow fronting of "affective" elements, Authier (1992) argues that topic phrases, like preposed affective elements, occupy the Spec of the second CP. Under this analysis, embedded Topicalization creates a structure like (13).

(13) Spec of the Second CP Analysis (Authier (1992) and others):
 ...[_{CP} that [_{CP} Topic [_C C_ø [_{IP} he ...

There are several problems with this analysis. First, as pointed out by Culicover (1991), Topicalization creates a syntactic island whereas preposing of an affective element such as Negative Preposing does not. This is shown below.

- (14) a. * On which table did Lee say that *these books* she will put.
 b. On which table did Lee say that *only these books* would she put.

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- (15) a. * Which books did Becky say that to Aaron she will give?
 b. Which books did Becky say that only to Aaron will she give?
- (16) a. * This is the book that John said that Mary_i he would inform t_i that I had read.
 b. This is the book that John said that only Mary_i would he inform t_i that I had read.

If the topic phrase and the preposed negative constituent occupy the same position as argued by Authier, the (a) sentences and the (b) sentences in (14-16) should be equally good or equally bad, a wrong prediction.

Another evidence against Authier's analysis is given in (17), in which a topic phrase and a preposed negative constituent cooccur (cf. Kuwabara (1992)).

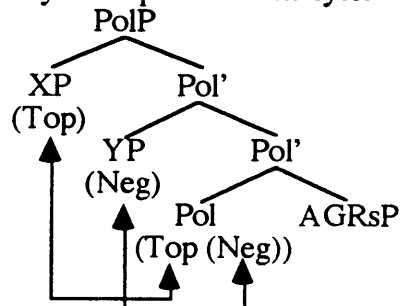
- (17) a. Becky said that these books, only with great difficulty can she carry.
 b. He said that beans, never in his life had he been able to stand.

This is problematic for Authier's analysis because his analysis crucially assumes that the topic and the preposed negative constituent occupy the same position, which incorrectly predicts that they cannot cooccur. Incidentally, when they occur in the same clause, they constitute a syntactic island (18a). Further, the topic must precede the preposed negative constituent. Other orders yield ungrammaticality (18b, c).

- (18) a. * On which table did Becky say that these books, only with great difficulty can she put?
 b. * Becky said that only with great difficulty can these books she carry.
 c. * Becky said that only with great difficulty these books can she carry.

Thus, it is clear that topic phrases are not placed in the same position as preposed affective elements (i.e. the Spec of the lower CP). Then, where is the topic located? I suggest that the second CP in English has two specifier positions. To avoid terminological confusion that might arise from having two CPs, I refer to the second complementizer type projection as Polarity Phrase, or PolP, following Culicover (1991). Using this new category name, I suggest that PolP in English may have (at most) two specifier positions, as shown in (19). This amounts to saying that the head of PolP in English may have two sets of NP-features, one for the higher Spec, and one for the lower Spec.

- (19) Layered Specifiers Analysis



θ -roles of a verb are hierarchically ordered (e.g. Agent > theme), so as NP-features of Pol (e.g. Top > Neg).¹ The topic phrase is licensed in the upper specifier position, and the preposed negative constituent is licensed in the lower specifier position. Under this analysis, (17a) has the structure in (20).

(20) ...[_{CP} that [_{PolP} these books [_{Pol} only with great difficulty [_{Pol} can [_{AGRSP}...

The head of PolP in (20) has a Topic feature to be checked against the Topic feature of the topic phrase in the upper Spec, as well as a Neg feature to be checked against the Neg feature of the negative constituent in the lower Spec. Since the upper Spec and the lower Spec are both in the checking domain of the head of PolP, the constituents in these positions enter into the checking relation with the head (cf. Chomsky (1993)).

This analysis captures the intuition behind Authier's analysis given in (12), because in the present analysis as in Authier's analysis, topic phrases and preposed negative constituents are licensed by the same category, i.e. Pol, and topic phrases are located in a specifier position after all. This accounts for the distributional similarity between Topicalization and Negative Preposing. At the same time, the present analysis is similar to the IP adjunction analysis of Lasnik & Saito (1992) in that the position for the topic phrase is not the canonical specifier position. Not many categories have two specifiers. In this sense, the upper Spec of PolP is a somewhat marked position. This may well be the reason why some speakers do not like Topicalization at all.

Now, let's return to (15), repeated here as (21).

- (21) a. * Which books did Becky say that to Aaron she will give?
b. Which books did Becky say that only to Aaron will she give?

Under our analysis, (21a) and (21b) have the structures in (22a) and (22b), respectively.

- (22) a. \downarrow * MCL violation
* WH_i.....[_{CP} t_i" that [_{PolP} [to Aaron]_j ([_{Pol} t_i') [_{Pol}.....t_i....t_j....] (I)]]
 \uparrow * MCL violation
b. WH_i.....[_{CP} t_i" that [_{PolP} t_i' [_{Pol} [only to Aaron]_j [_{Pol}.....t_i....t_j....]]]
 \uparrow \checkmark

In (22a), the wh-phrase moves across the topic phrase in the upper Spec of PolP, and this movement violates the Minimize Chain Links whether or not the lower Spec of PolP is used as an intermediate landing site. (21a) is thus ungrammatical. In contrast, in (22b), the wh-phrase moves to the sentence initial position through the upper Spec of the embedded PolP. The first step of this movement appears to

¹ I assume that both Top and Neg are features of Pol. A plausible alternative is that these features originate from other heads (e.g. the Neg feature from the head of NegP (or Σ P in the sense of Laka (1990)), the Top feature from Tense (cf. Fukui (1993))), and that PolP merely provides positions for feature checking.

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violate the MCL because it crosses a potential A-bar landing site, i.e. the lower Spec of PolP.² However, the MCL is not violated here, for the upper Spec and the lower Spec of PolP are equidistant from the base position of the moved wh-phrase. Hence, (21b) is grammatical.

To summarize so far, we have observed that the layered specifiers analysis provides a principled and simple account of the distributions of a topic phrase and a preposed negative constituent as well as certain similarities and differences between them, which is not the case under Authier's (1992) analysis. At this point one might wonder if our upper Spec position of PolP is in fact an adjoined position. Culicover (1991) suggests that that is the case:

- (23) PolP-adjunction Analysis (Culicover (1991))³
 $[_{CP} \text{ that } [_{PolP} \text{ Topic } [_{PolP} \text{ PNC } [_{Pol'} \text{ Pol } [_{IP} \dots]]]]]$

This analysis can account for the cooccurrence of a topic phrase and a preposed negative constituent (PNC). Thus, it is better than Authier's analysis in terms of empirical coverage. Nevertheless, it fails to explain some important facts, most notably the topic island phenomena, as Culicover (1991) himself admits. Consider (24a) with its structure (24b) under this analysis.

- (24) a. * On which table did Lee say that these books she will put.
 b. * $[_{CP} \text{ [on which table]}_i \dots [_{CP} \text{ t}_i \text{ that } [_{PolP} \text{ [these books]}_j [_{PolP} \text{ (t}_i \text{') } [_{IP} \dots \text{ t}_i \text{ t}_j \dots]]]]]$

In (24), the topic phrase first adjoins to PolP. Then the wh-phrase moves to the sentence initial position through the Spec of the embedded CP. Note that the PolP-adjoined position and the Spec of the embedded CP are equidistant, according to the definition of Equidistance given in Chomsky (1993) (they are both in the minimal domain of the embedded C). Thus, the wh-movement in (24) does not violate the MCL. That is, the PolP-adjunction analysis wrongly predicts that (24) is grammatical. Even if we somehow modify the definition of Equidistance so that the PolP-adjoined position and the Spec of CP are not equidistant from other positions, the PolP-adjunction analysis still cannot account for the topic island effect. This is because, in order to account for the topic island effect, we must make sure that the topic phrase adjoins to PolP before the wh-extraction takes place. Otherwise, there would be no island at the point of wh-movement. While this ordering might appear to follow from the Extension Condition (Strict Cyclicity), this is not the case under Chomsky's (1993) assumption that adjunction operations are not subject to the Extension Condition. Thus, as far as Topicalization is assumed to be an adjunction operation, there is no way of accounting for the topic island phenomena by the Minimize Chain Links (or Relativized Minimality).

² Negative Preposing is A-bar movement. It can be long distance, and it induces Weak Crossover effects.

(i) a. In none of these houses do I believe that a student could live t safely.

b. * No book_i would I expect its_i author to praise t publicly.

Negative Preposing is also possible across a preposed negative constituent.

(ii) No race would I expect that only with great difficulty could Lewis win.

³ The same structure is also proposed by Kuwabara (1992).

We have so far restricted ourselves to embedded Topicalization. Before closing this section, let us briefly discuss matrix Topicalization for completeness. According to Culicover (1991), matrix clauses lack CP, and a fronted *wh*-phrase of matrix *wh*-questions occupies the [lower] Spec of PolP, as shown in (25).

(25) Matrix clauses lack CP: [_{PolP} what did [_{AGRSP} you buy t]]

Thus, in matrix clauses, Topic precedes a fronted *wh*-phrase as well as a PNP, as exemplified in (26-27). The (a) sentences have the structure in (28).

- (26) a. These prices, what can anyone do about? (Langendoen (1979: 429))
 b. * What these prices can anyone do about?
 (27) a. To John, nothing would we give.
 b. * Nothing, to John would we give.
 (28) Matrix Topicalization + Wh-movement/Negative Preposing
 [_{PolP} Topic [_{Pol} WH/PNC [_{Pol} [_{Pol} AUX] [_{AGRSP}...

(26b) and (27b) are ungrammatical because the topic is in the lower Spec of PolP, which cannot host the topic phrase as mentioned above (see (19)). Since fronted *wh*-phrases and PNPs are both licensed in the lower Spec of PolP, they cannot cooccur in matrix clauses.

- (29) a. * Only with great difficulty on which table would she put the big rock?
 b. * On which table only with great difficulty would she put the big rock?
 (cf. ✓ I wonder [_{CP} on which table [_{PolP} only with great difficulty would [_{AGRSP} she put the big rock]]])

In this section, I have presented evidence for "layered specifiers." Topicalization in English is a movement to the upper Spec of PolP, whereas Negative Preposing is movement to the lower Spec of PolP. Given this, Topic Island phenomena is readily explained by the Minimize Chain Links. Absence of island effect in the case of negative preposing suggests that the notion of Equidistance is operative in A-bar movement as well as in A-movement. In the following sections, I will present further evidence for layered specifiers.

3. Embedded V2

Although languages like German and Dutch do not allow verb-second (V2) word order in embedded clauses with overt complementizers, there are languages in the Germanic family that do allow such constructions. Consider the following sentences.

- (30) a. Ir zolt visn zayn, mayne libe kinderlekh, az
 You (pl) should know be my dear children that
 vayn ken men makhn fun troybn oykh.
 wine can one make from grapes also (Yiddish: Diesing (1990))
 b. Jón segir að þessum hring hafi Ólafur lofad Maríu.
 Jon says that this ring has Olaf promised Mary
 (Icelandic: Thráinsson (1985))

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- c. Vi ved at denne bog har Bo ikke læst.
We know that this book has Bo not read
(Danish: Vikner (1991: 78))
- d. Jag vet att Eva kan man lita på.
I know that Eva can you rely on (Swedish: Holmberg (1986: 110))

A null hypothesis about the structures of these embedded V2 clauses (with overt complementizers) is that they all assume basically the same structure. As we have just observed, PolP is the locus of the Negative Preposing in English, an instance of embedded V2. It seems natural to extend this analysis to embedded V2 in other Germanic languages. If so, the sentences in (30) schematically have the structure in (31) (cf. de Haan & Weerman (1985), Holmberg (1986), Vikner (1991)).

- (31) Embedded V2 (A Uniform Analysis):
...[_{CP} C [_{PolP} XP [_{Pol'} [_{Pol} V] [_{AGRsP}...t...t...]]]]

Among languages in which verb-second word order can occur in embedded clauses introduced by overt complementizers, Yiddish and Icelandic allow syntactic extraction out of such embedded clauses, while Danish, Swedish, Frisian etc. do not. Some examples of wh-movement from within embedded clauses with V2 word order are shown in (32) and (33).

- (32) a. Vos hot er nit gevolt az in shul zoln di kinder leynen?
what has he not wanted that in school shall the children read
(Yiddish: Santorini (1989: 59))
- b. Hvaða blað sagði hún að á morgnana gæti hún bara rennt
which paper said she that in the morning could she only skim
yfir en á kvöldin reyndi hún að lesa vandlega?
over but in the evening tried she to read carefully
(Icelandic: Iatridou & Kroch (1993))
- (33) a. * Hvilken film sagde hun at i skolen havde børnene
Which film said she that in school-the had children-the
allerede set?
already seen
(Danish: Vikner (1991: 123))
- b. * Viken fest sa hon att roliga hattar skulle vi inte köpa till?
which party said he that funny hats should we not buy for
(Swedish: Diesing (1990))

These examples suggest that V2 creates a syntactic island in Danish and Swedish, but not in Yiddish and Icelandic (with respect to argument extraction). Why is this the case? I suggest that PolPs in Yiddish and Icelandic, like PolP in English, allow two specifier positions, whereas PolPs in Danish and Swedish have only one specifier position. Thus, the examples in (32) and (33) have the structures in (34) and (35), respectively.

- (34) Yiddish/Icelandic/English-type languages (PolP has two Spec's)
√WH_i...[_{CP} t_i" C [_{PolP} t_i' [_{Pol'} XP [_{Pol'} AUX [_{AGRsP}...t...t...]]]]
↑ _____ || _____ || _____ |

(35) Danish/Swedish/Frisian-type languages (PolP has only one Spec)

*WH_i...[_{CP} t_i C [_{PolP} XP [_{Pol} AUX [_{AGRS_P}...t_i...]]]]

↑ | * |

Note that in (35), the first step of the wh-movement violates the Minimize Chain Links because it crosses the Spec of PolP, a potential A-bar landing site. In (34), on the other hand, MCL violations do not arise, for the wh-phrase uses, as an escape hatch, the upper Spec of the embedded PolP. Remember that the upper Spec and the lower Spec of the same head are equidistant from any other position. The assumption that PolP in languages like Icelandic and English allows two specifier positions is justified by the sentences in (36), in which we can observe two NPs between the complementizer and the head of PolP.

- (36) a. Becky said [_{CP} that [_{PolP} these books [_{Pol} only with great difficulty
[_{Pol} can [_{AGRS_P} she carry]]]]] (English: =(17a))
- b. Jón segir [_{CP} að [_{PolP} þessum hring [_{Pol} honum [_{Pol} hafi [_{AGRS_P} Ólafur
Jon says that this ring it has Ólafur
lofad Maríu]]]]] (Icelandic: taken from Thráinsson (1979: 64)
promised Mary with labelled brackets added by M.K.)

Note that the pronoun in (36b) is neither a clitic nor a weak pronoun. It is a strong pronoun bearing stress. If the weak form is used instead, the sentence becomes ungrammatical, as shown in (37).

- (37) * Jón segir [_{CP} að [_{PolP} þessum hring [_{Pol} 'onum [_{Pol} hafi [_{AGRS_P} Ólafur
Jon says that this ring it (weak form) has Ólafur
lofad Maríu]]]]] (Icelandic: Höskuldur Thráinsson (p.c.))
promised Mary

This suggests that the pronoun in (36b) occupies a position for a full phrasal category (i.e. XP) rather than a position for X^o or sub-X^o category. This conclusion is reinforced by the fact that an epithet may occur in place of the pronoun.⁴

- (38) Jón segir [_{CP} að [_{PolP} Ólaf [_{Pol} þetta fífl [_{Pol} elski [_{AGRS_P} hún ekki]]]]]
John says that Olaf that fool loves she not

As far as I know, sentences corresponding to (36) are ungrammatical in Danish and Swedish.

Researchers such as Diesing (1990) and Iatridou & Kroch (1993) have proposed to account for the contrast between (32) and (33) by postulating different structures for embedded V2 in these two types of languages (cf. also Santorini (1992)). They claim that the V2 in Yiddish and Icelandic occurs in the

⁴ The example in (38) is taken from Zaenen (1985: 46) with brackets added by the present author. Zaenen reports that epithets are more natural in main clauses. Thus, while not everybody is totally happy with (38), everybody accepts (i).

(i) Ólaf, þetta fífl elski hún ekki
Olaf that fool loves she not

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domain of IP as in (39a), while the V2 in Danish and Frisian involves CP recursion as in (39b).

(39) Nonuniform Analysis of Embedded V2 (Iatridou & Kroch (1993) etc.):

- a. Yiddish/Icelandic: ...[_{CP} C [_{IP} XP [_{I'} V [...t...t...]]]]
- b. Danish/Frisian: ...[_{CP} C [_{CP} XP [_{C'} V [...t...t...]]]]

There are several problems with this analysis. First, in (39a), the “topic” phrase is in the Spec of IP. Under the standard assumptions, the Spec of IP is the position for the subject. Thus, non-subjects such as the object should not be able to occur in this position. In fact, Jonas & Bobaljik (1993) shows that in Icelandic, definite subjects must raise to the Spec of AGRsP by S-structure. This means that the embedded subject in (30b), repeated here as (40), is in the Spec of AGRsP (=IP) at S-structure.

- (40) Jón segir að þessum hring hafi Ólafur lofad Maríu. (Icelandic)
Jon says that this ring has Olaf promised Mary

Thus, the pre-verbal object in this sentence cannot be located within the domain of IP. Second, even if we grant, for the sake of argument, that the Spec of IP can be an A-bar position for the “topic” phrase as in (39a), it would not help at all, because, then extraction from within the IP necessarily crosses a potential A-bar landing site (the Spec of IP), which should yield a violation of the Minimize Chain Links. It will be thus incorrectly predicted that Yiddish-type languages do not allow extraction out of embedded clauses with verb-second word order.

For these reasons, the nonuniform analysis (39) seems untenable. See Vikner (1991) for further arguments against it.

4. Multiple WH Fronting

As a final piece of evidence for layered specifiers and relevance of Equidistance to A-bar movement, let us consider multiple wh-fronting constructions. In Slavic and some other languages, all wh-phrases are preposed at S-structure, as exemplified in (41) (Bošković (1993a)).

- (41) a. Zavisi od tova, kog kogo prvu e udaril (Bulgarian)
depends on it who whom first is-cl hit
'It depends on who hit whom first.'
- b. Zavisi od toga ko koga prvi udari? (Serbo-Croatian)
depends on it who whom first hits
'It depends on who hit whom first.'

Among multiple wh-fronting languages, Bulgarian and Romanian allow extraction out of wh-islands, while Serbo-Croatian, Czech, etc. do not. This is shown in (42).

- (42) a. Pentru care clauză_i veri să afli cine nu a decis
for which paragraph want-2s to learn who not has decided
încă ce va vota —_i
yet what will-3s vote

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'For which paragraph do you want to learn who has not decided yet what he will vote?' (Romanian: Comorovski (1986))

- b. * Šta si me pitao ko može da uradi?
 what have-2s me asked who can to do
 'What did you ask me who can do?' (Serbo-Croatian: Rudin (1988))

As discussed in Rudin (1988) and others, multiple wh-fronting sentences in Bulgarian and Romanian have different structures than those in Serbo-Croatian and Czech. In the former, all wh-phrases are located to the left of the head of CP as in (43a), while in the latter, only one wh-phrase occurs to the left of C, and the remaining wh-phrases appear after the C position, as in (43b).

- (43) Positions of Wh-phrases
 a. Bulgarian/Romanian: WH WH...WH C
 b. Serbo-Croatian/Czech: WH C WH WH...

Thus, in Serbo-Croatian, sequences of preposed wh-phrases can be interrupted by adverbs and/or clitics, but the same is not true in Bulgarian, as shown in (44).

- (44) a. * Zavisi od tova, kog pruv kogo e udaril (Bulgarian)
 depends on it who first whom is-cl hit
 'It depends on who hit whom first.'
 b. Zavisi od toga ko prvi koga udari? (Serbo-Croatian)
 depends on it who first whom hits
 'It depends on who hit whom first.'

I suggest that multiple wh-fronting sentences in these two types of languages have the structures in (45).

- (45) Layered Specifiers Analysis of Multiple Wh-Fronting
- a. Bulgarian/Romanian

b. Serbo-Croatian/Czech

In Bulgarian-type languages, C can license indefinitely many specifier positions. In Serbo-Croatian-type languages, in contrast, C may have only one specifier position as English C, but Pol can license many specifier positions.

Under this analysis, (46a) has an S-structure like (46b).

(46) a. Koga je kako Petar istukao (Serbo-Croatian)
 Whom is how Peter beaten
 b. $[_{CP} \text{whom}_{i...} ([_{PolP} t_i') \text{how } [_{PolP} (/Pol') \text{how } [_{Pol...} t_i...]] (I)]$
 ↑ (II) |

Turning back to (42), consider (47).

- (47) a. Romanian (42a): $\sqrt{WH_i \dots [_{CP} t'_i [_{C'} WH_j C [_{PolP} \dots t_j \dots t_i \dots]]]}$
 $\quad \quad \quad \uparrow \quad \quad \quad (ii) \quad || \quad \quad \quad (i) \quad \quad \quad |$
- b. Serbo-Croatian (42b): $* WH_i \dots [_{CP} WH_j C [_{PolP} \dots t_j \dots t_i \dots]]]$
 $\quad \quad \quad \uparrow \quad \quad \quad (i) \quad \quad \quad |$

5. Conclusion

⁶ Rudin (1988) argues that in Bulgarian and Romanian, all *wh*-phrases fronted to the clause initial position are in the single Spec of CP. The first *wh*-phrase substitutes the Spec of CP, and the remaining ones adjoin to the Spec position from the right. Besides several theoretical questions (e.g., why do *wh*-phrases *right*-adjoin to the Spec of CP, instead of more usual left-adjunction?), none of her evidence for single constituency is convincing. For instance, Rudin cites, as evidence for her claim, the fact that adverbs may not intervene between the fronted *wh*-phrases (see (44)). However, this has a straightforward explanation under the layered specifiers analysis: as is well known, adverbs in general cannot be affiliated with projections of C (*John said [_{CP} yesterday/unfortunately that [he missed the train]]). Her strongest argument has to do with Superiority effects, for which she presents an ECP account. However, her analysis has been challenged on empirical grounds (see Bošković (1993b) and Koizumi (in prep.)).

these conclusions, especially (i), turn out to be correct, the standard X'-schema in (1) must be dismissed, along with more exclusive theories of phrase structures such as Kayne's (1993). The "bare" X'-theory is supported in that it does not stipulate the number of projections per head across categories cross-linguistically. The number of specifiers of a category seems to be determined primarily by the number of slots that its "Feature Grid" for Spec has. Category Pol in English, for example, has two slots, as we have seen in Section 2. To what extent the distribution of layered specifiers in a language is predictable from other properties of the language is a question for future research. Finally, it should be noted that, although the layered specifiers discussed in this paper are all A-bar specifiers, specifier layering is possible in A-system as well. See Ura (1993) for multiple specifiers of AGR.

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